CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/KRIDL/W.No.09/CSR-12/234h/CEMENT/2016-17 Date: 02.01.2017

TEST REPORT ON CEMENT

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of Work	:	Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
* Sample ID	:	Cement – Sample 1
Sample Received on	:	31.12.2016
Period of Testing	:	31.12.2016 to 02.01.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	30.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	145 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	480 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

AE-9

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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VIDYARANI P.K.
Technical Manager

Jadhav
AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.09/CSR-12/234h/SAND-Gradation/2016-17 02.01.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	: **Executive Engineer,** KRIDL, Bangalore.
* Name of Work	: Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
* Sample ID	: Fine Aggregates - Sample 1
Technical Reference	: IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	: 31.12.2016
Date of Testing	: 02.01.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	95.20	90-100	90-100	90-100	95-100
2.36	75.60	60-95	75-100	85-100	95-100
1.18	53.40	30-70	55-90	75-100	90-100
600 Micron	28.40	15-34	35-59	60-79	80-100
300 Micron	13.90	5-20	8-30	12-40	15-50
150 Micron	5.00	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

VIDYARANI P.K.
Technical Manager

****

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.09/CSR-12/234h/AGG/GR/2016-17 02.01.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of Work	:	Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
* Sample ID	:	Coarse Aggregates (40mm) - Sample 1
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	31.12.2016
Date of Testing	:	02.01.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	98.10	95-100	85-100
20	35.10	30-70	0-20
10	14.20	10-35	0-5
4.75	3.80	0-5	-

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore - 97

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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VIDYARANI P.K.
Technical Manager

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#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.09/CSR-12/234h/AGG/GR/2016-17 02.01.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of Work	:	Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
* Sample ID	:	Coarse Aggregates (20mm) - Sample 1
Technical Reference	:	IS : 2386 (Part 1) -1963(RA-2011)
Sample Received on	:	31.12.2016
Date of Testing	:	02.01.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS :383-1970 (RA- 2011)	
		Graded	Single Sized
40	100	100	100
20	96.90	95-100	85-100
10	30.10	25-55	0-20
4.75	2.60	0-10	0-5

Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits

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VIDYARANI P.K.
Technical Manager

****

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

Civil-Tech Consultants & Engineers Bangalore

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.09/CSR-12/234h/CC Solid Block/2016-17 05.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF SOLID CONCRETE BLOCKS

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of Work	:	Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
Technical Reference	:	IS: 2185 (Part-1) - 2005 (RA-2010)
Size of Blocks	:	400mm x 200mm x 200mm
Cross Sectional Area	:	80000 mm^2
No. of Blocks Tested	:	08
Sample Received on	:	02.01.2017
Date of Testing	:	05.01.2017

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS: 2185 (Part-1) - 2005 (RA-2010)
1	Block 1	35.23	262.5	3.28	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	34.85	261.4	3.27	
3	Block 3	36.25	260.3	3.25	
4	Block 4	36.74	259.7	3.25	
5	Block 5	35.48	263.5	3.29	
6	Block 6	35.47	262.4	3.28	
7	Block 7	35.96	260.8	3.26	
8	Block 8	34.78	261.9	3.27	

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

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VIDYARANI P.K.
Technical Manager

****

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/KRIDL/W.No.09/Tiles/2016-17 23.01.2017

TEST REPORT ON CEMENT CONCRETE TILES

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of the Work	:	Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
* Sample ID	:	Pre-Polished Designer Cement Concrete Tiles
Technical Reference	:	IS: 1237-1980 (Reaffirmed 2006)
No. of Samples Tested	:	12 (Twelve)
Date of Testing	:	23.01.2017

I. DIMENSIONS TEST:

Sl. No.	Measured Dimension (mm)	Tollerence as per IS 1237-1980 (Reaffirmed 2006)	Thickness	Tollerence as per IS: 1237-1980 (Reaffirmed 2006)
1	300 x 300	300± 1mm X 300± 1mm	26.00	25 +5mm
2	300 x 300	300± 1mm X 300± 1mm	25.00	
3	300 x 300	300± 1mm X 300± 1mm	25.00	
4	300 x 300	300± 1mm X 300± 1mm	26.00	
5	300 x 300	300± 1mm X 300± 1mm	25.00	
6	300 x 300	300± 1mm X 300± 1mm	25.00	

II. WATER ABSORPTION

Sl. No.	Water Absorption (% by Wt)	Average (% by Wt)	Requirement as per IS: 1237-1980 (Reaffirmed 2006)
1	2.2	2.30	The average percentage of water absorption should not exceed 10% when 6 full size tiles are tested.
2	2.6		
3	2.1		
4	2.3		
5	2.2		
6	2.4		

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Civil-tech Consultants & Engineers
#23/14, 7th Cross 3rd Stage 4th Block,
Shakthi Ganapathinagar,
Basaveshwaranagar, Bangalore-560 079.

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Job No.: CTCE/BBMP/KRIDL/W.No.09/CSR-12/234h/Cube/2016-17 09.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
* Agency	:	**Executive Engineer,** KRIDL, Bangalore.
* Name of the work	:	Providing and fixing open GYM equipments at HMT Layout 5th Block Park in Ward No.09, Vidyaranyapura Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/BTP/WO/73/2016-17 Dated: 20.07.2016
* Sample ID	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	09.02.2017

Assistant Executive Engineer Vidyaranyapura Sub Division BBMP, Bangalore-97

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	12.01.2017	09.02.2017	8.263	348.6	15.49
2	12.01.2017	09.02.2017	8.475	379.5	16.87
3	12.01.2017	09.02.2017	8.362	356.4	15.84

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VIDYARANI P.K.
Technical Manager

****

Sadhna AE

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com